The device has applications in spacecraft propulsion. Conventional spacecraft propulsion systems depend on Newton's III Law, and operate by jettisoning mass out of the spacecraft in one direction, which results in a reactive force in the opposite direction. Conventional propulsion systems thus have a limited life, determined by the time when all the propellant is exhausted.

The action motor differs from the reaction motor (rocket) in that it is all electric. This gives it a lifespan determined by the longevity of the power supply; which in the case of solar power or atomic power could be measured in decades or centuries. Note that although this device offers revolutionary advantages over conventional propulsion systems, it does not provide something for nothing. The SCAM is an electrical device, and needs an electrical power supply. The power supply is of out the scope of this patent.

The device works by virtue of the temporal lag affecting the forces experienced on a current-carrying conductor caused by a current in another conductor some distance away, and parallel to the first. By phasing the currents such that the current in one wire, L, precedes a similar current in another wire, H, H will perceive a current in L when H itself is conducting, but not contrary-wise, i.e. when L is conducting it perceives no current in H, thus experiencing no force. In the description that follows, "segment 1" refers to the segment of Plate 1 in FIG 3, and "segment 2" refers to the segment of Plate 2 in FIG 3. The timing of electrical current pulses in segment 1 and segment 2 is such that segment 2 experiences an attractive force, and segment 1 experiences no force. The force on segment 2 is due to the arrival of the segment 1 signal simultaneous with a current pulse in segment 2, yielding a force of magnitude given by

equation (i). The absence of an attractive force in segment 1 is due to there being no current in segment 1 when the segment 2 signal arrives at segment 1. The sum total of all forces on segment 1 and segment 2 is therefore non-zero. This means that there is a one-directional force on the device as a whole. The small force on these two example current segments is multiplied by arranging many such segment pairs in a two-dimensional grid. Figure 3 shows a single segment pair, and their dimension relationships. FIG 3 also shows the arrangement of the feeder wires, aligned perpendicularly to the plate surface, in order not to interfere with the SCAM force.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG 1: **current frequency**

Shows the current pulse profile with its 1:3 nature. Shows the pulse width (duration), *p*, with respect to the plate separation, *a*.

FIG 2: **phasing chart**

Shows the phase relationship of the currents in the two plates.

FIG 3: **x and z separation of 2 segments, ie segment pair**

Shows the dimension relationship of the separation of parallel and aligned segments, in the two plates. This figure shows the two segments of a segment pair, one segment in each plate. The segment pair is also shown with the feeder wires, aligned perpendicularly to the plate surface, in order not to interfere with the SCAM force.

FIG 4: **x and z separation of neighboring segments**

Shows the dimension relationships of the separation of parallel and displaced segments, in the two plates. This figure shows six segments,